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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,107	03/30/2004	Richard M. Peterson	SMD-58-CON	5544

22827 7590 03/08/2007

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EXAMINER	
LAZORCIK, JASON L	
ART UNIT	**PAPER NUMBER**
1731	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/813,107	PETERSON ET AL.	
	Examiner	Art Unit	
	Jason L. Lazorcik	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 March 2004 and 18 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *41-113* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *41-113* is/are rejected.

7)☒ Claim(s) *46,47,53,54,67,79,80,88,89,96,97 and 110* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/01/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *IDS Filed: 12/10/2004*.

DETAILED ACTION

Claim Objections

Claims 46, 47, 53, 54 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 46, 47, 79, 80, 88, and 89 set forth limitations upon the manner in which the treated regions are deposited (e.g. "the treated discrete areas are formed by...") yet none of the claims clearly provide a new structural limitation upon the paper wrapper article. For this reason, the claim is objected to for failing to further limit the subject matter of the parent claim.

Claims 53, 54, 96, and 97 set forth limitations upon the manner in which the treated regions are deposited (e.g. "wherein the amount of the film forming composition...varies between at lest two of the layers..."). Again, none of the identified claims clearly provides a new structural limitation upon the paper wrapper article.

Claim 67 and 110 relates a limitation drawn to an intended use of the paper and/or smoking article (e.g. the treated areas cause...). As presented, these claims place no further limitation upon the structure of the article itself and are therefore objected to for failure to further limit the parent claim.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 66 and 109 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "invisible to a user" in claims 66 and 109 is a relative term which renders the claim indefinite. The term "invisible to a user" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Specifically, invisibility is understood to be relative to the individual user and further to the specific situation and ambient conditions.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 41-113 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peterson (US 5,878,753) in view of Hampl (US 4,739,755) and Hampl (US 6,298,860 B1).

With respect to independent **claims 41, 70, 83, and 113**, Peterson teaches a paper wrapper for a cigarette and the cigarette comprising said wrapper and tobacco column as depicted in the instant reference Figures 1 and 2. Figure 2 teaches cigarette paper web presenting a plurality of "discrete circumferential bands" **[Claims 42, 84]** coated with a film forming composition wherein consecutive bands are spaced apart by untreated regions of paper web. The reference clearly teaches that the treated regions have "a preferred permeability less than 6 ml/min.cm^2 (Coresta), and generally within a range of 2-6 ml/min/cm^2." (Column 5, lines 57-62) **[Claim 68, 95, 111]**

It is the Examiners understanding that both the Coresta (CU) and BMI or "Burn mode index" represent alternate but effectively equivalent measures of porosity and in the instant case specifically describe the porosity of the treated region or bands. To this end, although Peterson discloses a Coresta value for the bands which reads upon the claimed range, the reference fails to disclose the treated band porosity as measured by the BMI value.

The patent to Hampl et. al. (US 4,739,775) provides insight into the BMI value and its relation to the CU. The Hampl reference relates the methods of acquiring a BMI value in addition to presenting an exemplary comparison between the Coresta value of a wrapper (30 CU) and its equivalent porosity as measured by BMI (14 cm-1) (see

Table 1). By the Hampl reference, it is the Examiners understanding that the CU and BMI are related by an approximate 2:1 ratio (e.g. 30 CU:14 BMI). Therefore absent compelling evidence to the contrary, Peterson is understood to teach a treated band presenting a BMI value of approximately 3 cm^{-1} or less (e.g. half the CU value of less than 6 CU) [**Claim 69, 81, 82, 112**].

With respect the particular details of band width and spacing as required by **Claims 70 and 113**, the Peterson reference teaches that "Applicants have determined that, for the cigarettes tested, a minimum band width of 4mm is desired" (Column 6, Lines 3-4) [**claim 43, 85**] and that "In the cigarettes tested, applicants have found that a band spacing of between 5 and 10mm is appropriate" (Column 6, Lines 18-19) [**Claim 44, 45, 86, 87**].

Peterson further sets forth both band spacing and band width as clear result effective variables subject to empirical optimization. Specifically, Peterson teaches that the "width and spacing of bands are dependent on a number of variables, such as the initial permeability of wrapper 14, density of tobacco column 12, etc". The reference continues by teaching that the bands preferably have a width sufficient to limit the oxygen provided to the burning coal. The reference further asserts that the band spacing should not be so large as to promote burning trough the bands, but not so small as to self-extinguish the cigarette in a free-burn state. Therefore, the band width and band spacing are held as result effective variables of the paper wrapper which one of ordinary skill in the art would be able to optimize through routine experimentation.

The instant reference further discloses that "Applicants have found that a non-aqueous solution of a solvent soluble cellulosic polymer with a particulate inorganic non-reactive filler suspended in solution works particularly well" (Column 6, Lines 25-28) [**Claim 52, 57, 58, 63, 64, 73, 94, 100, 101, 106, 107**]. The reference continues by teaching that particularly well-suited fillers include titanium oxide or a "metal oxide" [**Claim 65, 72, 74, 108**] (Column 7, Line 5) and that ethyl cellulose acts as a preferred binder for the filler particles (Column 6, Lines 54-56) [**Claim 75**]. While the above coating composition sets forth a preferred embodiment, Peterson teaches that aqueous solutions [**Claim 56, 99**] which a variety of common film forming components include alginate, polyvinyl alcohol [**Claim 48, Claim 50, 90, 92**]. Although not expressly disclosed in the instant reference, one of ordinary skill in the art would recognize both polyvinyl acetate and starch as potential substitutes for the film forming component in the film forming composition [**Claim 49, claim 51, 71, 91, 93**].

IN discussing the mode of depositing the bands, Peterson discloses that the bands are deposited using a commercial gravure press in a 3 pass process [**Claim 46, 47, 79, 80, 88, 89**]. Said deposition produces a "ramp pattern" increasing gradually from 0% to 100% over the three printing passes Column 11, Lines 26-57). The disclosed process is understood to vary the amount of film forming composition applied to the paper web by at least 1% between at least two of the layers [Claim 53, 54, 96, 97].

Now, Peterson fails to explicitly teach the application of an alkali metal citrate to the paper web to act as a "burn control additive", however such an addition would have

been readily obvious to one of ordinary skill in the art at the time of the invention. Again looking to the analogous teachings of Hampl (US 4,739,775), it is disclosed that "While the base cigarette paper may be conventional, it may contain small amounts of an ash conditioner, such as potassium citrate. However the amount of the ash conditioner must be below the level which causes the wrappers to support combustion of a cigarette in spite of the bands. (Column 4, Lines 52-58). It would have therefore been obvious to one of ordinary skill in the art at the time of the invention to modify the Peterson invention to include a burn control additive such as an alkali citrate [**Claims 60, 61, 62, 103, 104, 105**]. This would have been an obvious modification to one of ordinary skill seeking to promote ash formation in a cigarette article.

Additionally, while Peterson teaches the use of a particular commercially available brand of paper (e.g. Kimberly-Clark Corporation KC Grade 603 paper) with a porosity of approximately 35 CU, the reference fails to explicitly teach the use of a paper web having a permeability of greater than about 60 CU as required by independent **Claims 41, 70, 83, and 113**. That said, Peterson does teach that "Wrapper (14) may include any manner of commercially available cigarette wrapper,...It should be understood that any other manner of paper web may be used in this regard."(Column 5, Lines 23-27). Hampl (US 6,298,860 B1) teaches the use of a paper for contructing smoking articles having a basis weight from 18 gsm to 60 gsm [**Claims 59, 102**] and also having "a permeability of from about 5 Coresta units to about 80 Coresta units" (Column 2, Lines 46-51). Since the use of a cigarette paper having a porosity of about 80 Coresta units is known in the art of cigarette manufacturing and Peterson teaches

that any manner of commercially available cigarette paper can be used in the disclosed invention, the use of a paper having a permeability of "greater than about 60 Coresta" or "greater than about 80 Coresta units" would have been obvious modification to the Peterson process at the time of the invention [**Claims 55, 76, 77, 78, 98**].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Lazorcik whose telephone number is (571) 272-2217. The examiner can normally be reached on Monday through Friday 8:30 am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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